

REMARKS

The present application was filed on February 11, 2000 with claims 1-34. Claims 1-34 are currently pending in the application. Claims 1 and 26-34 are the independent claims.

In the Office Action, the Examiner rejected claims 1, 2, 6-8, 20 and 25-34 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,144,656 (hereinafter “Kinnunen”), rejected claims 9, 10, 13, 16-19 and 23 under 35 U.S.C. §103(a) as being unpatentable over Kinnunen, and indicated that claims 5, 15 and 22-24 would be allowable if rewritten in independent form.

In this response, Applicants amend the specification and claims 26 and 29, and traverse the §102(e) and §103(a) rejections. Applicants respectfully request reconsideration of the present application in view of the following remarks.

The specification has been amended to update related application information.

Each of claims 26 and 29 has been amended to incorporate an additional means element.

Applicants initially traverse on the ground that the Office Action is improper on its face, for failing to provide a clear disposition for each of the pending claims. More particularly, the Examiner has failed to address dependent claims 3, 4, 11, 12, 14 and 21 in the Office Action. Any subsequent Office Action should therefore be given a non-final status, such that Applicants are provided with a reasonable opportunity to consider the disposition of claims 3, 4, 11, 12, 14 and 21.

With regard to the §102(e) rejection, Applicants note that the Manual of Patent Examining Procedure (MPEP), Eight Edition, August 2001, §2131, specifies that a given claim is anticipated “only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference,” citing Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, MPEP §2131 indicates that the cited reference must show the “identical invention . . . in as complete detail as is contained in the . . . claim,” citing Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). For the reasons identified below, Applicants submit that the Examiner has failed to establish anticipation of at least independent claims 1 and 26-34 by the Kinnunen reference.

Each of independent claims 1, 26 and 27 calls for transmission of at least one of an uplink access signal and an uplink timing synchronization signal from a mobile station to a base station in a particular one of a set of recurring intervals in which regular uplink data transmission from at least

one additional mobile station to the base station is at least partially suspended. Kinnunen not only fails to teach or suggest this limitation, but in fact actively teaches away from it.

The Examiner in formulating the §102(e) rejection argues that the Kinnunen reference in the abstract, columns 5-7 and FIG. 1 teaches the above-noted limitation of claims 1, 26 and 27. Applicants respectfully disagree. The Kinnunen reference is directed to a system in which regular data transmission between mobile stations and a base station occurs in a traffic channel, while timing and other related information is transmitted between the mobile stations and the base station in a separate control channel. This is made clear throughout the Kinnunen reference. For example, the Kinnunen reference at column 1, lines 10-17, states as follows with emphasis supplied:

The invention relates to a method for synchronizing a telecommunications connection in a mobile communications system comprising a database; at least one base station communicating with mobile stations on TDMA (Time Division Multiple Access) system channels consisting of control channels and traffic channels whose uplink and downlink frequencies are divided into frames a part of which may be defined dynamically, by means of determining an energy economy mode start frame and the length of an energy economy cycle, for a mobile station in said database as energy economy mode sleeping frames, during which said mobile station is not prepared to receive transmissions on downlink frequencies;

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Moreover, Kinnunen in the description of FIG. 1 at column 5, line 54 to column 6, line 33 indicates that the mobile stations TMRU communicate with the base station BS over system channels which include control channels denoted TMCCCH and separate traffic channels denoted TMTCH.

Since Kinnunen uses separate channels for control and traffic communications between the mobile stations and the base station, transmission of an uplink access signal or an uplink timing synchronization signal from a given mobile station to a base station in Kinnunen does not occur in a particular one of a set of recurring intervals in which regular uplink data transmission from at least one additional mobile station to the base station is at least partially suspended. More specifically, since Kinnunen teaches to use separate channels for control and traffic communications between the

mobile station and the base station, there is absolutely no need whatsoever to interrupt regular uplink data transmissions from any other mobile station in order to allow the given mobile station to transmit an uplink access signal or an uplink timing synchronization signal. Kinnunen, by teaching the use of completely separate control and traffic channels, therefore actively teaches away from the above-noted limitation of claims 1, 26 and 27 relating to transmission of an uplink access signal or an uplink timing synchronization signal from a mobile station to a base station in a particular one of a set of recurring intervals in which regular uplink data transmission from at least one additional mobile station to the base station is at least partially suspended.

Applicants also note that the “direct mode” referred to in Kinnunen is a mode in which the mobile stations communicate directly with one another, as described at column 1, line 39 to column 2, line 17. More specifically, this portion of the Kinnunen reference describes the direct mode as follows, with emphasis supplied:

Subscriber stations operating in the direct mode communicate with other subscriber stations on a direct mode channel without having a direct connection to the base stations of the mobile network. Subscriber stations operating in the direct mode, however, may communicate with the mobile network via repeater stations. A repeater station typically comprises two transceivers connected to each other.

Therefore, any teachings in Kinnunen relating to direct mode communications are irrelevant to the claimed invention, which is clearly directed to uplink communication between a mobile station and a base station.

Since Kinnunen fails to teach or suggest the limitations of each of independent claims 1, 26 and 27, these claims are not anticipated by Kinnunen. Independent claims 28-34 include limitations that are similarly not met by the teachings of Kinnunen, and are believed allowable for substantially the same reasons identified above with regard to claims 1, 26 and 27.

Dependent claims 2-4, 6-14, 16-21 and 25 are believed allowable at least by virtue of their dependence from independent claim 1. One or more of these claims are also believed to define additional separately-patentable subject matter relative to Kinnunen.

In view of the above, Applicants believe that claims 1-34 are in condition for allowance, and respectfully request withdrawal of the §102(e) and §103(a) rejections.

A marked-up version of the changes made by the present Amendment is attached hereto.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

The paragraph beginning on page 1, line 6, has been amended as follows:

The present invention is related to the invention described in U.S. Patent Application [Attorney Docket No. Laroia 14-7-3-3] Serial No. 09/503,041, filed concurrently herewith in the name of inventors R. Laroia et al. and entitled "Signal Construction, Detection and Estimation for Uplink Timing Synchronization and Access Control in a Multi-Access Wireless Communication System," which is incorporated by reference herein.

The paragraph beginning on page 4, line 17, has been amended as follows:

Signal construction, detection and estimation techniques suitable for use in conjunction with the present invention are described in the above-cited U.S. Patent Application [Attorney Docket No. Laroia 14-7-3-3] Serial No. 09/503,041.

IN THE CLAIMS

26. (Amended) An apparatus for uplink communication between a mobile station and a base station of a wireless communication system, the apparatus comprising:

means for generating at least one of an uplink access signal and an uplink timing synchronization signal; and

means for transmitting the generated at least one [of an uplink access signal and an uplink timing synchronization] signal from the mobile station to the base station in a particular one of a set of recurring intervals in which regular uplink data transmission from at least one additional mobile station to the base station is at least partially suspended.

29. (Amended) An apparatus for uplink communication between a mobile station and a base station of a wireless communication system, the apparatus comprising:

means for receiving in the base station at least one of an uplink access signal and an uplink timing synchronization signal transmitted from the mobile station in a particular one of a set of recurring intervals in which regular uplink data transmission from at least one additional mobile station to the base station is at least partially suspended; and

means for processing the received at least one signal.